

Okanogan County  
WATER CONSERVANCY BOARD  
Application for Change/Transfer  
Record of Decision

For Ecology Use Only

Received:

Reviewed by: \_\_\_\_\_  
Date Reviewed: \_\_\_\_\_

**Applicant: Crown Resources Corporation**

**Application Number: OKAN-12-02**

This record of decision was made by a majority of the board at an open public meeting of the Okanogan County Water Conservancy Board held **June 5, 2013**

☐ **Approval:** The Okanogan County Water Conservancy Board hereby **grants** conditional approval for the water right transfer described and conditioned within the report of examination on **June 5th, 2013** and submits this record of decision and report of examination to the Department of Ecology for final review.

☐ **Denial:** The Okanogan County Water Conservancy Board hereby **denies** conditional approval for the water right transfer as described within the report of examination on **June 5th, 2013** and submits this record of decision to the Department of Ecology for final review.

Signed:

John Hubbard, Chair  
Okanogan County Water Conservancy Board

Date: 6-5-13

Approve	<input checked="" type="checkbox"/>
Deny	<input type="checkbox"/>
Abstain	<input type="checkbox"/>
Recuse	<input type="checkbox"/>
Other	<input type="checkbox"/>

Rod Noel, Member  
Okanogan County Water Conservancy Board

Date: 6-5-13

Approve	<input checked="" type="checkbox"/>
Deny	<input type="checkbox"/>
Abstain	<input type="checkbox"/>
Recuse	<input type="checkbox"/>
Other	<input type="checkbox"/>

Mark Miller, Member  
Okanogan County Water Conservancy Board

Date: 6/5/13

Approve	<input checked="" type="checkbox"/>
Deny	<input type="checkbox"/>
Abstain	<input type="checkbox"/>
Recuse	<input type="checkbox"/>
Other	<input type="checkbox"/>

Lee Barker, Member  
Okanogan County Water Conservancy Board

Date: 6/5/13

Approve	<input checked="" type="checkbox"/>
Deny	<input type="checkbox"/>
Abstain	<input type="checkbox"/>
Recuse	<input type="checkbox"/>
Other	<input type="checkbox"/>

\_\_\_\_\_  
(Name), (Title)  
(Board Name) Water Conservancy Board

Date: \_\_\_\_\_

Approve	<input type="checkbox"/>
Deny	<input type="checkbox"/>
Abstain	<input type="checkbox"/>
Recuse	<input type="checkbox"/>
Other	<input type="checkbox"/>

Mailed to the Department of Ecology Central Regional Office of Ecology, via certified mail, and other interested parties on \_\_\_\_\_.

If you have special accommodation needs or require this form in alternate format, please contact 360-407-6607 (Voice) or 711 (TTY) or 1-800-833-6388 (TTY).

Ecology is an equal opportunity employer





Okanogan County  
WATER CONSERVANCY BOARD  
Application for Change/Transfer  
OF A RIGHT TO THE BENEFICIAL USE OF THE PUBLIC WATERS OF  
THE STATE OF WASHINGTON

Report of Examination

DEPT C  
Re:  
JUN 12 2013

☒ Surface Water ☐ Ground Water

DATE APPLICATION RECEIVED November 14, 2012	WATER RIGHT DOCUMENT NUMBER (i.e., claim, permit, certificate, etc.) S4-34999P	WATER RIGHT PRIORITY DATE March 24, 2005	BOARD-ASSIGNED CHANGE APPLICATION NUMBER OKAN-12-02
------------------------------------------------	-----------------------------------------------------------------------------------	---------------------------------------------	--------------------------------------------------------

NAME Crown Resources Corporation			
ADDRESS (STREET) 363 Fish Hatchery Road	(CITY) Republic	(STATE) WA	(ZIP CODE) 99166

Changes Proposed: ☐ Change purpose ☐ Add purpose ☐ Add irrigated acres ☐ Change point of diversion/withdrawal  
☒ Add point of diversion/withdrawal ☒ Change place of use ☐ Other (Temporary, Trust, Interties, etc.)

**SEPA**  
The board has reviewed the provisions of the State Environmental Policy Act of 1971, Chapter 43.21C RCW and the SEPA rules, chapter 197-11 WAC and has determined the application is: ☐ Exempt ☒ Not exempt

BACKGROUND AND DECISION SUMMARY

Existing Right (Tentative Determination)

MAXIMUM CUB FT/ SECOND 0.111	MAXIMUM GAL/MINUTE	MAXIMUM ACRE-FT/YR 12.6	TYPE OF USE, PERIOD OF USE 0.111 cfs, 12.6 ac-ft/yr for mining and industrial use. The annual quantity of 12.6 ac-ft/yr is non-additive to the annual quantity for G4-34904.				
SOURCE Storm water runoff and drainage			TRIBUTARY OF (IF SURFACE WATER) Nicholson Creek				
AT A POINT LOCATED:  Interceptor Trench (lower) Interceptor Trench (upper)	¼ NE NW	¼ SW SW	SECTION 24 24	TOWNSHIP N. 40N	RANGE 30E	WRIA 60	COUNTY. Okanogan
LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED S½NW¼ and SW¼, Section 24; and the NE¼SE¼ and SE¼SE¼, Section 23; all in T. 40 N., R. 30 E.W.M.							
PARCEL NO.	¼	¼	SECTION	TOWNSHIP N. 40		RANGE, 30 E.W.M.	

Proposed Use

MAXIMUM CUB FT/ SECOND 0.111	MAXIMUM GAL/MINUTE	MAXIMUM ACRE-FT/YR 12.6	TYPE OF USE, PERIOD OF USE 0.111 cfs, 12.6 ac-ft/yr for mining and industrial use. The annual quantity of 12.6 ac-ft/yr is non-additive to the annual quantity for G4-34904.				
SOURCE Storm water runoff and drainage			TRIBUTARY OF (IF SURFACE WATER) Nicholson Creek				
AT A POINT LOCATED:	¼	¼	SECTION	TOWNSHIP N.	RANGE	WRIA	COUNTY.
Interceptor Trench (lower)	NE	SW	24	40N	30E	60	Okanogan
Interceptor Trench (upper)	NW	SW	24				
Blue Tarp Sump	NE	SW	24				
LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED							
Sections 2, 3, 4, and 5 all in T. 39 N., R. 31 E.W.M.; Sections 13, 14, 16, 23, 24, 25, 26, and 36 all in T. 40 N., R. 30 E.W.M.; and Sections 18, 19, 30, 31, and 32 all in T. 40 N., R. 31 E.W.M.							
PARCEL NO.	¼	¼	SECTION	TOWNSHIP N.		RANGE,	

Board's Decision on the Application

MAXIMUM CUB FT/ SECOND 0.111		MAXIMUM GAL/MINUTE		MAXIMUM ACRE-FT/YR 12.6		TYPE OF USE, PERIOD OF USE 0.111 cfs, 12.6 ac-ft/yr for mining and industrial use. The annual quantity of 12.6 ac-ft/yr is non-additive to the annual quantity for G4-34904.		
SOURCE					TRIBUTARY OF (IF SURFACE WATER)			
AT A POINT LOCATED:		¼	¼	SECTION	TOWNSHIP N.	RANGE	WRIA	COUNTY.
Interceptor Trench (lower)		NE	SW	24	40N	30E	60	Okanogan
Interceptor Trench (upper)		NW	SW	24				
Blue Tarp Sump		NE	SW	24				
LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED AS APPROVED BY THE BOARD								
Sections 2, 3, 4, and 5 all in T. 39 N., R. 31 E.W.M.; Sections 13, 14, 16, 23, 24, 25, 26, and 36 all in T. 40 N., R. 30 E.W.M.; and Sections 18, 19, 30, 31, and 32 all in T. 40 N., R. 31 E.W.M.								
PARCEL NO.		¼	¼	SECTION	TOWNSHIP N.		RANGE,	
		!! FORMTEXT						



---

**DESCRIPTION OF PROPOSED WORKS**

---

Storm water runoff and drainage from the upper and lower portal development rock and ore stockpiles are collected and conveyed to a surge pond near the lower portal. Stormwater runoff is also collected at the base of the slope of the surge pond in the blue tarp sump. A portion of the water is stored in the surge pond and is used for mining operations. The remaining water stored in the surge pond is treated at the water treatment facility. Treated water is pumped to the headwaters of Marias Creek and the Roosevelt Adit or to other authorized discharge locations. Several other Water Right Applications are associated with the project as discussed in further detail below. A National Pollutant Discharge Elimination System (NPDES) permit for the water treatment facility and associated discharge of treated water to surface water and groundwater was issued by Ecology on September 27, 2007, with an effective date of November 1, 2007.

---

**DEVELOPMENT SCHEDULE**

---

BEGIN PROJECT BY THIS DATE: Begun	COMPLETE PROJECT BY THIS DATE: Complete (already constructed)	COMPLETE CHANGE AND PUT WATER TO FULL USE BY THIS DATE: Term permit, expires December 31, 2015
--------------------------------------	------------------------------------------------------------------	---------------------------------------------------------------------------------------------------

---

---

**REPORT**

---

**BACKGROUND** [See WAC 173-153-130(6)(a)]

On November 14, 2012, Crown Resources Corporation of Republic, Washington filed an application for change to add a point of diversion and change the place of use under S4-34999. The additional point of diversion is requested to comply with NPDES permit requirements to collect and treat storm water and snowmelt runoff contacting deployment rock and ore stockpiles at the mine (Refer to Ecology's Administrative Order No. 6674 attached). The additional place of use will allow the applicant to use treated storm water for dust control on haul roads at the mine site that were not previously authorized; total water use for dust control will not be increased. The application was accepted at an open public meeting on November 14, 2012, and the board assigned application number OKAN-12-02.

*Attributes of the water right as currently documented*

Name on certificate, claim, permit: Crown Resources Corporation

Water right document number: S4-34999

Priority date: March 24, 2005

Water quantities: Qi: 0.111 cfs Qa: 12.6 acre ft./ year

Source: Storm water runoff and drainage

Point of diversion/withdrawal: SW $\frac{1}{4}$  of Section 24, T. 40 N., R. 30 E.W.M.

Purpose of use: drilling, cement backfill, shotcrete production, and dust control.

Period of use: 0.111 cubic feet per second, 12.6 acre-feet per year, for mining and industrial use (Year 0 through 7)\*, continuously.

Place of use: S $\frac{1}{2}$ NW $\frac{1}{4}$  and SW $\frac{1}{4}$ , Section 24; and the NE $\frac{1}{4}$ SE $\frac{1}{4}$  and SE $\frac{1}{4}$ SE $\frac{1}{4}$ , Section 23; all in T. 40 N., R. 30 E.W.M.

Existing provisions: Non-additive to Water Right No. G4-34904.

\*Note: As it relates to mining at the Buckhorn mine site, Year 0 = 2007

*Tentative determination of the water right*

The tentative determination is provided on the front page of this report.

*History of water use*

Crown Resources Corporation filed water right application No. S4-34999 on March 24, 2005 with the Department of Ecology.

This is one of nine water right applications filed with Ecology to support the Buckhorn Mountain Project, an underground gold mine at Buckhorn Mountain in Okanogan County, Washington. Mine construction started in 2007 and mine operations began in late 2008. The mine is owned and operated by Crown Resources, a wholly owned subsidiary of Kinross Gold Corporation (Kinross). The project proponents filed nine water right applications with Ecology to obtain permits for proposed consumptive and non-consumptive uses for mining operations, dust control along truck haul routes, multiple domestic use for employees, and mitigation for mining-related water use. These applications were approved by Ecology between September 2006 and November 2007.

Management of storm water and snowmelt runoff at the site includes collection, treatment, and discharge of water contacting development rock and ore stockpiles, which is required under the NPDES permit. Storm water and snowmelt runoff collected from the stockpiles, plus water from dewatering of the underground mine, are stored in the surge pond prior to treatment and discharge to surface water or infiltration to the ground. A portion of water conveyed to the surge pond would be placed into beneficial use in underground mining operations under three related water right permits (Water Right Nos. G4-34904, S4-34999, and R4-35093). Storage of water in the surge pond for beneficial use is authorized under Reservoir Permit No. R4-35093, and diverted for use under permits associated with this application and with Water Right No. G4-34904.

In 2011, Crown Resources and Ecology identified an additional seep of stormwater located at the base of the slope of



the surge pond. Crown Resources installed a blue tarp in this area, along with a sump pump, to capture and divert this storm water to the surge pond for treatment. In 2012, Ecology staff, Kurt Walker, identified the need for a change application to be filed to authorize this additional diversion point. This change authorization requests a permit for collection and conveyance to the surge pond reservoir for beneficial use of precipitation and snowmelt runoff originating from the blue tarp sump and an expanded place of use for dust abatement on mine haul roads. Application No. G4-34904 requests collection and conveyance of water derived from mine dewatering activities to the surge pond for beneficial use. This water is diverted from the surge pond reservoir at a maximum rate of 0.333 cfs (150 gpm), of which 0.111 cfs (50 gpm) is associated with this application and 0.222 cfs (100 gpm) is associated with Water Right No. G4-34904.

#### SEPA

The board has reviewed the proposed project in its entirety. This water right is a piece of the larger Buckhorn Mountain Mine project. Ecology prepared a Supplemental Environmental Impact Statement (SEIS) and issued the Final SEIS on September 15, 2006. Under WAC 197-11-600, the board incorporates these documents by reference. The board finds that no new probably significant adverse environmental impacts that were not already considered by existing environmental documents are associated with this proposal.

#### COMMENT AND PROTESTS [See WAC 173-153-130(6)(b)]

Public notice of the application was given in the Okanogan Valley Gazette on January 10, 2013, and January 17, 2013. Protest period ended on February 16, 2013.

There were three protest letters received during the 30 day protest period. In addition, no oral and written comments were received at an open public meeting of the board or other means as designated by the board.

#### Discussion of Protests

Three letters of protest, from the Center for Environmental Law and policy (CELP), the Okanogan Highlands Alliance (OHA), and the Colville Confederated Tribes (CCT), were received by Ecology within the 30-day comment period following publication of the public notice. Concerns expressed in the protest letters, and the associated protesters, included:

- Defective application and public notice; the original application did not specify all wells currently requested as additional points of withdrawal; lack of clarity as to number of wells, volume of withdrawals, and concern about mine expansion (OHA, CELP, CCT).
- Well locations in Section 23 are outside the scope and analysis that was examined in originally approving G4-34904P. The original evaluation did not include adequate environmental review of the current application and groundwater modeling does not support withdrawal locations requested by this application (OHA, CELP, CCT).
- Wells in Section 23, above the headwaters of South Fork of Bolster Creek, may adversely affect stream flows, seeps and springs, and existing water rights; withdrawals in this location was not considered in the ARMP and the potential additional impacts have not been mitigated (OHA, CCT).
- Well location D-6 is outside the mine footprint and is outside the purpose of dewatering the mine.
- The well in Section 24 will draw contaminants outside the mine capture zone, spreading groundwater contaminants beyond the mine footprint; the cone of depression from new wells would further spread contaminants in the future (OHA). The ARMP must be amended to address impacts of these wells (OHA, CELP).
- Pumping from the wells in Section 23, on the west side of Buckhorn Mountain hydrologic divide, and discharging to the east side of the hydrologic divide will transfer water from one basin to another and would adversely impact senior water rights in the Myers Creek Basin, and be detrimental to the public interest (OHA, CELP).
- There is no assurance that requirements for G4-34904 would be enforced. The applicant has not carried out requirements of the G4-34904P water right and Ecology has not enforced all of the requirements (OHA). The change raises the potential for water use in excess of the right (CELP).
- Lack of water available for appropriation. Every other water right application in past years in Toroda and Myers Creek basins have been denied due to lack of water. WDFW has recommended denial of new water rights as far back as 1950. Independent of impairment of rights, "a proposed withdrawal of groundwater from a closed stream or lake in hydraulic continuity must be denied if it is established factually that the withdrawal will have any effect on the flow or level of the surface water (OHA)."
- Water not put to beneficial use and is being wasted. Water that is being withdrawn and discharged will be degraded in quality (OHA).
- Not in the public interest. Expanding points of withdrawal into the Myers Creek Basin would affect senior water rights and spread mine contaminants (OHA).
- Aquatic Resources. Impacts to aquatic resources, including seeps, springs, wetlands, and flows in Bolster Creek must be fully considered (OHA).
- Aquatic Resources Mitigation Plan. The ARMP does not adequately describe aquatic resources in the affected area and mitigation does not offset impacts in conjunction with the impacts of the mine (OHA).
- Ecology is required to protect surface waters in order to preserve the natural environment, in particular, 'base flows' necessary to provide for preservation of wildlife, fish, scenic, aesthetic and other environmental values and navigational values (CCT).
- Contaminants associated with mining are detrimental to fish. In the past the groundwater capture zone has failed to contain impacted water. Additional wells are likely to draw contaminated groundwater outside the mine footprint. Mine discharges resulted in a landslide in the Gold Bowl Creek basin (CCT).



Each of these concerns is addressed in the following sections. Although some of the protests do not apply to both change applications, for completeness, the board included responses to each protest for the combination of change application OKAN-12-01 and OKAN-12-02. Some of these protests are also more expansive in scope than the place of use change being sought herein. The Board notes that at the time this change authorization was being investigated, Ecology was concurrently evaluating a change to add three existing dewatering wells to permit G4-34904P (CG4-34904P), which is the subject of the bulk of the protest comments.

*Defective application and public notice, lack of clarity, mine expansion*

The proposal under this change is simply to re-authorize wells D-6, D-8, and D-9 (a replacement for well D-7 that is no longer in use) that were authorized under a temporary approval of G4-34904P, as well as authorize new wells MW-2R and MW-14, located at the northeast edge of the mine workings in Section 24. These wells are required to maintain the groundwater capture zone around the mine workings and surface features, a condition of the NPDES permit. The purpose of the capture zone is to ensure that water impacted by mine activities is contained, collected, and treated prior to discharge. The new wells to maintain the capture zone are required under Ecology's 2009 Administrative Order No. 6674. No expansion of the mine or mine life is requested under this change, and use of water for mining activities would not increase.

The public notice accurately summarized the proposal to add points of withdrawal to the mine dewatering system and meets the requirements for notice of a change application under RCW 90.03.280 and Ecology Procedure PRO-1000. An application can be amended prior to publishing the public notice; the Department of Ecology (Ecology) was informed of the final selection of well locations prior to publishing the public notice.

*Well locations in Section 23 are outside the original scope and analysis; environmental review of the current application note adequate; and groundwater modeling does not support requested withdrawal locations*

Wells D-8 and D-9 (replacement for D-7) in the SE1/4SE1/4 of Section 23 are located within the lateral extent of the mine workings considered in the groundwater flow modeling of the SEIS. The flow model did not explicitly include dewatering well locations, but instead applied "dewatering nodes" throughout the mine workings to "simulate the combined effects of groundwater pumping and seepage of groundwater into the mine" (Section 5.1.2, Regional Three-Dimensional Groundwater Flow Model of Buckhorn Mountain, URS, 2006). Therefore, the SEIS evaluated the effects of groundwater withdrawal at the locations of D-8 and D-9 in the same manner as it evaluated the effects of withdrawals at wells D-1 through D-5 and underground mine sumps originally permitted by G4-34904P.

*Wells in Section 23, above the headwaters of South Fork of Bolster Creek, may adversely affect stream flows, seeps and springs, and existing water rights and were not considered in the ARMP.*

The wells in Section 23 are within the footprint of the mine workings and impacts of groundwater removal from this area above the headwaters of Bolster Creek were considered in the SEIS (see above response). Based on groundwater flow modeling, the SEIS identified potential impacts in the Bolster Creek drainage from mine dewatering, including flow reductions in the creek and flow reductions at seeps and springs that support wetlands near the headwaters. Mitigation is already in place for these impacts, including preservation and enhancement of the 29-acre Pine Chee wetland, riparian enhancement along Myers Creek, installation of a guzzler near the headwaters of Bolster Creek to provide an alternate source of water for wildlife, and replacement of a shallow domestic well for a group of families near the outlet of Bolster Creek. Further, under the ARMP (Section 6), Hydrologic Monitoring Plan (HMP; pages 5-9 and Appendix A), Ecological and Aquatic Resources Monitoring Plan (EARMP; Section 2.5), and Adaptive Management Plan (AMP; Appendices A, B, and E) flow monitoring and seep and wetland monitoring in South Fork Bolster Creek are required to assess actual versus predicted impacts, with criteria for determining when additional mitigation may be required.

*Well location D-6 is outside the mine footprint and is outside the purpose of dewatering the mine.*

The location of D-6 is within the mine footprint. Mine dewatering, maintenance of a groundwater capture zone, and discharge of water are authorized and regulated by the NPDES permit administered by Ecology's water quality program and do not require a water right permit in and of themselves; G4-34904P only authorizes beneficial use of that portion of the withdrawn water required for mining and industrial operations at the mine site, and neither the quantity of water for beneficial use nor purpose of use is proposed for change through the subject application.

*New wells will draw contaminants outside the mine capture zone, spreading groundwater contaminants beyond the mine footprint. The ARMP must be amended to address impacts of these wells.*

The purpose of the additional wells is to maintain a capture zone around the mine workings and surface features to ensure that water impacted by mine activities is contained, collected, and treated prior to discharge. The additional wells were installed pursuant to an administrative order from Ecology (Order No. 6674) in 2009. Well locations were selected in consultation with Ecology, consistent with contingencies outlined in the Adaptive Management Plan developed for the project. The additional wells (D-6, D-8, and D-9) installed and operated under a temporary change to G4-34904P along with two more wells (MW-2R and MW-14) requested under the pending change to G4-34904P have proven effective in re-establishing the capture zone, based on interpretations of groundwater level monitoring data submitted to Ecology with the NPDES Discharge Monitoring Reports.

*Pumping on the west side of Buckhorn Mountain and discharging to the east side will transfer water from one basin to another and adversely impact senior water rights in the Myers Creek Basin.*

The effects of removal of water and dewatering of mine workings on the west side of the hydrologic divide at the locations of the additional points of withdrawal in Section 23 were evaluated in the SEIS. No additional water quantities are proposed to



be used under these proposed changes. Appropriate mitigation, monitoring, and adaptive management requirements to address the export of water from the west side to the east side of the divide and potential impacts to the Bolster Creek and Myers Creek drainage were developed through the EIS process and incorporated into G4-34904P; See above response to impacts to South Fork Bolster Creek. Appropriate mitigation, monitoring, and adaptive management requirements to address the existing water rights were also developed through the EIS process and incorporated into the water rights. Also, as per the SEIS, AMP, ARMP, and HMP, Crown augments Myers Creek with its private water rights in order to satisfy the needs of the senior water rights.

*Ecology has not enforced all of the requirements of G4-34904 and the change raises the potential for water use in excess of the right.*

Response: Ecology and Kinross are working to ensure monitoring and reporting requirements are carried out in accordance with relevant permits and monitoring and mitigation plans. Beneficial use of the mine water under G4-34904P is within the authorized quantities for this permit. The SEIS acknowledged the uncertainty in and potential variability of mine dewatering rates, and mine dewatering has been generally consistent with the expected range evaluated in the SEIS. Mitigation was developed based on expected potential impacts identified in the SEIS, with uncertainty addressed through monitoring of the effectiveness of mitigation and adaptive management approach should mitigation be insufficient to offset actual impacts. Use of water is metered and reported to Ecology, and no water in excess of this authorization will be used.

*Lack of water available for appropriation, previous denials of applications, application for groundwater in continuity with closed surface water source must be denied.*

The protest correctly points out that previous applications for new water rights have been denied based on lack of water availability in the Toroda Creek and Myers Creek drainages, and that these basins have generally been treated as closed to further consumptive appropriation. Formal basin closures or minimum instream flows have not been established for these drainages based on administrative rule making. Instead, denials of new water rights due to lack of water availability have been based on recommendations from WDFW that remaining flows are necessary to maintain aquatic resources. WDFW recommendations to deny new water rights have historically been issued for applications that do not include sufficient mitigation of impacts to aquatic resources. Based on the mitigation offered, including the monitoring and adaptive management approaches developed through the EIS process and incorporated into the water right approval, WDFW had no objection to the mining water right application. The existing mitigation, combined with monitoring and adaptive management, is sufficient and appropriate to address potential impacts under the proposed change to G4-34904P. Moreover, the subject application is a change application and no increase in total or consumptive use will result from the proposal.

*Water not put to beneficial use and is being wasted. Water that is being withdrawn and discharged will be degraded in quality.*

The water right permitting process only covers water that is withdrawn or diverted for beneficial use, and the quantities specified in G4-34904P are limited to the portion of water required for mining and industrial uses. Groundwater removal required to dewater the mine and maintain a capture zone around the mine workings in excess of beneficial use requirements is not subject to the water right permitting process. These activities, including treatment standards to address the potential for degradation of water quality, do require compliance with the NPDES permit for the facility.

*Expanding points of withdrawal into the Myers Creek Basin would affect senior water rights and spread mine contaminants.*

Potential impacts of the mine project on senior water right holders were fully evaluated in the SEIS. Appropriate mitigation, monitoring, and adaptive management were developed to address impacts and were incorporated into the water right permits for the project. As discussed above, the purpose of the additional points of withdrawal is to maintain a capture zone around the mine to avoid transport of contaminants. The additional wells have proven effective in maintaining the capture zone and Crown Resources works with Ecology to evaluate capture zone effectiveness on a monthly basis. No additional water will be consumed, only the points of withdrawal are proposed to be changed.

*Impacts to aquatic resources, including seeps, springs, wetlands, and flows in Bolster Creek must be fully considered.*

Potential impacts to these aquatic resources were fully evaluated in the SEIS. The effects of the entire project, including groundwater removal near the headwater of Bolster Creek, were evaluated in the SEIS, and appropriate mitigation, monitoring, and adaptive management were developed to address impacts and account for uncertainties. There is no change in the volumes or uses of water associated with this water right.

*The ARMP does not adequately describe aquatic resources in the affected area and mitigation does not offset impacts in conjunction with the impacts of the mine.*

Aquatic resources in the project area and potential impacts associated with project were thoroughly investigated and described in the SEIS, results of which were used to develop the ARMP. The effects of the entire project, including groundwater removal near the headwater of Bolster Creek, were evaluated in the SEIS, and appropriate mitigation, monitoring, and adaptive management were developed to address impacts and account for uncertainties.

*Ecology is required to protect surface waters in order to preserve the natural environment, in particular, 'base flows' necessary to provide for preservation of wildlife, fish, scenic, aesthetic and other environmental values and navigational values.*

Potential impacts of the project were evaluated fully in the SEIS, including impacts to surface waters and associated fish and wildlife habitat. Mitigation, monitoring, and adaptive management requirements to protect surface waters were developed



based on potential impacts identified in the SEIS. The requested additional wells are not outside the scope of the project evaluated in the SEIS and the combination of existing mitigation, monitoring, and adaptive management is sufficient to protect potentially affected surface waters.

*Contaminants associated with mining are detrimental to fish. In the past the groundwater capture zone has failed to contain impacted water. Additional wells are likely to draw contaminated groundwater outside the mine footprint. Mine discharges resulted in a landslide in the Gold Bowl Creek basin.*

The new wells were developed to comply with an administrative order from Ecology to maintain the groundwater capture zone in accordance with the NPDES permit and to ensure that groundwater impacted by mining is contained, collected, and treated to water quality standards protective of aquatic resources (e.g., fish) prior to discharge to surface water and groundwater. The new wells have been effective in re-establishing the capture zone, based on interpretations of groundwater level monitoring data submitted to Ecology with the NPDES Discharge Monitoring Reports. The landslide in the Gold Bowl Creek basin is beyond the scope of the water right permitting process.

#### INVESTIGATION [See WAC 173-153-130(6)(c)]

Board rule WAC 173-153-110(2) gives the Board the discretion on whether a site visit is appropriate in every case. Because this surface water right change is only proposing to add place of use (additional roads for dust abatement) and an additional point of diversion to supplement collection of runoff from the development rock and ore stockpiles, the Board felt a site visit wasn't necessary.

Instead, the Board relied on review of available records. The following information was obtained and reviewed:

- Original authorization, water right no. S4-34999.
- Research of related water rights in the vicinity.
- Site maps.
- Aerial imagery of the project.
- Photos of the site.
- Conversations with the applicant and/or other interested parties.
- State Water Code Chapter 90.03 RCW.
- Ecology guidance documents.

#### *Proposed project plans and specifications*

The proposed plans and specifications for water conveyance, storage, and treatment are the same as that proposed and authorized in Water Right No. S4-34999. The purpose of this water right change is to authorize additional place of use to include mine haul roads not previously authorized and a point of diversion referred to as the blue tarp sump located near the surge pond; total beneficial use of water will not change. The blue tarp sump was constructed by the applicant to collect runoff from development rock and ore stockpiles that bypasses the existing authorized interceptor trench points of diversion. Collection and treatment of this water is required under the NPDES permit. Because this water is comingled with water that is diverted or withdrawn and beneficially used for mining purposes under S4-34999 and G4-34904, Ecology requested that the applicant add the blue tarp sump as a point of diversion. Water is conveyed from the sump to the surge pond for storage, treatment, and beneficial use or discharge under the NPDES permit. Visual observations of discharge from the sump to the surge pond indicate flows of less than about 0.01 cfs.

#### *Hydrology*

Buckhorn Mountain is located within the Kettle River watershed, Water Resource Inventory Area (WRIA) 60. The Kettle River originates in British Columbia, Canada, first entering the United States approximately 10 miles northeast of Buckhorn Mountain in an area referred to as Ferry. Approximately 25 miles downstream from Ferry, the Kettle River reenters Canada near Danville, Washington. The river enters Washington again near Laurier and flows into Lake Roosevelt near Kettle Falls.

Major tributaries of the Kettle River in Washington are Myers, Toroda, Boulder, Deadman, and Curlew creeks. Buckhorn Mountain forms the surface water divide between the Myers Creek and Toroda Creek drainage basins.

The west side of the ridge forming Buckhorn Mountain is drained by Ethel, Bolster, and Gold creeks, all of which are tributaries to Myers Creek. MaryAnn Creek flows in to Myers Creek from the west, entering between Ethel and Bolster creeks. Myers Creek flows northward across the border into Canada, where it joins the Kettle River. The east side of the mountain is drained by Marias and Nicholson creeks, which are tributaries to Toroda Creek, and Gold Bowl Creek, which is a tributary to South Fork Nicholson Creek. Toroda Creek flows north and east, joining the Kettle River approximately 4 miles downstream from where the river first enters the United States from Canada. The location of drainages in the vicinity of the proposed mine site are shown on Attachment 1.

The USGS operated a stream gage on Myers Creek immediately upstream of the Canadian border (USGS Station 12400900 Myers Creek near Chesaw, WA). For the period of record of 1996 to 2001, average monthly flows ranged from 8.0 cfs in January to 57 cfs in May. During the irrigation season, the lowest average monthly flow occurred in September, with a flow rate of 9.4 cfs. The minimum recorded daily flow was 2.0 cfs on August 15, 2001. The British Columbia Environment Water Management Program operated a seasonal (typically May through September) stream gage at the Canadian Border from 1923 to 1950 and from 1968 to 1977 (Station 08NN010 Myers Creek at International Boundary). The lowest average monthly flows during the irrigation season at this gage occurred in August and September, with flow rates of about 3.8 cfs. Recorded daily flows dropped below 1.0 cfs for one or more days throughout the 1920s and 1930s, and in 1968, 1970, 1973, and 1977.



There are no long-term gauging stations on Toroda Creek, although several temporary stations were installed in support of a previously proposed open-pit mine project at Buckhorn Mountain. Measured flows from these temporary stations were highest in May (80 cfs in 1994) and lowest in October. In October 1994 flows ranged from 2.0 to 4.0 cfs. No winter measurements were taken.

*Other water rights appurtenant to the property (if applicable)*

This is one of nine water right applications filed with Ecology to support the Buckhorn Mountain Project, an underground gold mine at Buckhorn Mountain in Okanogan County, Washington. Mine construction started in 2007 and mine operations began in late 2008. The mine is owned and operated by Crown Resources, a wholly owned subsidiary of Kinross Gold Corporation (Kinross). The project proponents filed nine water right applications with Ecology to obtain permits for proposed consumptive and non-consumptive uses for mining operations, dust control along truck haul routes, multiple domestic use for employees, and mitigation for mining-related water use. These applications were approved by Ecology between September 2006 and November 2007.

The nine water right applications associated with the project are:

- **S4-34999P (Stormwater).** This change application is the subject of this Report of Examination. Water Right Permit No. S4-34999P, approved by Ecology on October 24, 2007, authorizes a surface water diversion for industrial and mining use, to augment mine operational needs not met by the quantities authorized under Water Right Permit No. G4-3904. Authorized Qi and Qa are 0.111 cfs and 12.6 acre-ft/yr. The Qa is non-additive to the Qa authorized under Water Right No. G4-3904. This authorized source of water is collection of storm water drainage from ore and development rock stockpiles and will be stored temporarily in the surge pond reservoir under Reservoir Permit No. R4-35093P. The current change application, filed November 14, 2012, seeks to authorize additional place of use to include dust control on additional haul roads and a point of diversion referred to as the blue tarp sump. The blue tarp sump collects runoff from development rock and ore stockpiles that is not adequately captured by the existing authorized interceptor trench points of diversion. Collection and treatment of this water is required under the NPDES permit.
- **CG4-34904 (Mine Dewatering).** This application, approved by Ecology on November 21, 2007, authorizes a groundwater withdrawal for mining and industrial use from five wells and a network of underground sumps. Use for streamflow augmentation is also authorized at the end of mining and associated mine dewatering. The Qi and Qa authorized for beneficial use are 100 gpm and 12.6 acre-ft/yr during mining, and 100 gpm and 3.34 acre-ft/yr following the end of mining. A pending change application filed with Ecology on October 29, 2009 seeks to add additional points of withdrawals (wells) to support mine dewatering and water management activities, including maintaining a groundwater capture zone encompassing all underground mine working as required under NPDES Permit No. WA-005243-4. A second change application is pending with the Okanogan Conservancy Board. That application, accepted on November 14, 2012 and assigned application number OKAN-12-02, seeks to add place of use to include mine haul roads not previously authorized, consistent with the changes requested for S4-34999P and evaluated in this Report of Examination.
- **G4-34905 (Domestic).** This application, approved by Ecology on October 25, 2007, authorizes a groundwater withdrawal for dust control and domestic use for site employees from a single well. The authorized Qi is 5 gpm. The authorized Qa is 5.2 acre-ft/yr, of which 2.8 acre-ft/yr is for domestic use and 2.4 acre-ft/yr is for dust control.
- **R4-35093 (Reservoir).** This application, approved by Ecology on October 24, 2007, authorizes a storage facility (surge pond) for water derived from mine dewatering and stormwater under Water Right Permit Nos. G4-34904 and S4-34999. A maximum of 3.0 acre-feet of water for beneficial use would be stored by the facility at any given point in time.
- **CG4-CCV1-4P200 (Dust Control and Instream Flow Mitigation).** This change application (Newman) approved by Ecology on September 26, 2006, changes the purpose, place, and time of use of a certificated seasonal irrigation water right for two groundwater wells to use in year-round dust control and seasonal mitigation of mining impacts on streamflows. The total certificated quantities for this right are a Qi of 300 gpm and a Qa of 200 acre-ft/yr.
- **G4-35084 (Instream Flow Mitigation).** This application (Lost Creek Ranch), approved by Ecology on November 21, 2007, authorizes a groundwater withdrawal for streamflow augmentation in Myers Creek, as needed during the irrigation season of April 1 through September 30. Authorized Qi and Qa are 125 gpm and 44.19 acre-ft/yr respectively. These quantities are non-additive to the appropriation authorized under Water Right Certificate No. G4-22893C.
- **CS4-ADJ47P45 (Instream Flow Mitigation).** This change application (Leslie Trust), approved by Ecology on October 19, 2007, temporarily changes the purpose of use of an existing water right from agricultural irrigation use to instream flow mitigation use. Use of up to 0.078 cfs and 23.52 acre-ft/yr were approved for mitigation during mining and during recovery of water levels associated with cessation of mine dewatering. Use would revert back to agricultural at the end of mitigation.
- **CS4-ADJ47P36 (Instream Flow Mitigation).** This change application (Thorp Trust), approved by Ecology on October 19, 2007, permanently changes the use from stock watering from Myers Creek to instream flow mitigation. Under the change, 0.0071 cfs and 4.03 acre-ft/yr of water used for stock watering from Myers Creek between September 1 and June 15 is permanently dedicated to trust for instream flow mitigation. Approved mitigation quantities at the international border are 0.0064 cfs (4,150 gpd) and 3.67 acre-ft/yr over the period of September 1 through June 15.
- **CG3-29653P (Mining).** This change application, approved by Ecology on September 28, 2006, changes the place of use from the K2 Mine to the proposed backfill borrow site in Ferry County. The total permitted quantities for this water right permit are 50 gpm and 80 acre-ft/yr for mining purposes.



In order to make a water right change decision, the Board must make a tentative determination on the validity and extent of the right. The Board has made the tentative determination as displayed upon the first page of this report. There are several circumstances that can cause the board's tentative determination to differ from the stated extent of the water right within water right documentation. Water right documents attempt to define a maximum limitation to a water right, rather than the actual extent to which a water right has been developed and maintained through historic beneficial use. Additionally, except for a sufficient cause pursuant to RCW 90.14.140, water rights, in whole or in part, not put to a beneficial use for five consecutive years since 1967 may be subject to relinquishment under Chapter 90.14.130 through 90.14.180 RCW. Water rights may additionally be lost through abandonment. The Board's tentative determination was based upon the following findings:

There is no relinquishment or abandonment concerns because this water right is a term permit and will expire on the date in which the development schedule is complete (see development schedule on page 3). Water right No. S4-34999 will expire on December 31, 2014. Water has been applied to beneficial use and is eligible for change to add a new point of diversion under RCW 90.03.380.

## **CONCLUSIONS [See WAC 173-153-130(6)(d)]**

### *Tentative determination (validity and extent of the right)*

Refer to page 1 of this report.

### *Relinquishment or abandonment concerns*

Because water right No. S4-34999, having priority of March 24, 2005, is a term permit and will expire on December 31, 2015, there is no relinquishment or abandonment concerns.

### *Consideration of comments and protests*

Please see Discussion of Protests section starting on page 4 of this report.

### *Impairment*

This water right transfer will not increase beneficial use of water for mining or streamflow augmentation, and will not result in increased impacts to surface water flows or wetland habitat beyond what was evaluated in the SEIS. Adding the blue tarp sump as a point of diversion will allow the applicant to collect and manage water consistent with the intent of the original authorized points of diversion to collect runoff from the ore and development rock stockpiles. Therefore, adding the blue tarp sump as an additional point of diversion and adding place of use will not result in impairment of senior water right holders.

### *Public Interest*

Changes under RCW 90.03.380 for surface water rights are not subject to a public interest review (Pend Oreille PUD v. Ecology, 2003).

## **DECISION [See WAC 173-153-130(6)(e)]**

Based on the above investigation and conclusions, I recommend that the request for change to S4-34999P be authorized, in the amounts and within the limitations listed below and subject to the provisions beginning on Page 2.

### **Purpose of Use and Authorized Quantities**

The amount of water recommended is a maximum limit and the water user may only use that amount of water within the specified limit that is reasonable and beneficial.

0.111 cfs, 12.6 acre-feet per year for mining and industrial use. This is a term permit and use is authorized until the end of mining at which point use will cease (December 31, 2015). This annual quantity of 12.6 acre-feet per year is non-additive to the annual quantity for G4-34904.

### **Points of Diversion**

Interceptor Trenches at Development Rock and Ore Stockpiles – NE $\frac{1}{4}$ SW $\frac{1}{4}$ , Section 24, T. 40 N., R. 30 E.W.M. (lower portal)  
Interceptor Trenches at Development Rock and Ore Stockpiles – NW $\frac{1}{4}$ SW $\frac{1}{4}$ , Section 24, T. 40 N., R. 30 E.W.M. (upper portal)  
Blue Tarp Sump – NE $\frac{1}{4}$ SW $\frac{1}{4}$ , Section 24, T. 40 N., R. 30 E.W.M.

### **Place of Use**

As described on Page 1 of this Report of Examination

## **PROVISIONS [See WAC 173-153-130(6)(f)]**

1. The amount of water granted is a maximum limit that shall not be exceeded and the water user shall be entitled only to that amount of water within the specified limit that is beneficially used and required.



2. At no time shall the combined use of water under this Permit and Ground Water Permit No. G4-34904P exceed 12.6 acre-ft/yr.

**Measurements, Monitoring, Metering, and Reporting**

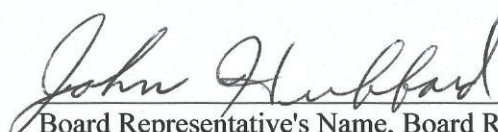
3. An approved measuring device shall be installed and maintained for each of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC.
4. Water use data shall be recorded monthly. The maximum rate of diversion/withdrawal and the annual total volume shall be submitted to Ecology by January 31st of each calendar year. The following information shall be included with each submittal of water use data: (1) owner; (2) contact name if different; (3) mailing address; (4) daytime phone number; (5) WRIA; (6) Permit/Certificate No.; (7) source name; (8) annual quantity used including units of measurement; (9) maximum rate of diversion, including units of measurement, (10) weekly meter readings including units of measurement, (11) peak monthly flow including units of measurement, (12) purpose of use, and (13) well tag numbers. In the future, Ecology may require additional parameters to be reported or to be reported on a more frequent basis. Ecology prefers web based data entry, but does accept hard copies. Ecology will provide forms and electronic data entry information.
5. Chapter 173-173 WAC describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition Ecology for modification to some of the requirements. Installation, operation, and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".
6. Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.
7. If it can be shown that the requested appropriation has a detrimental effect on existing rights, it shall be the responsibility of the water right holder to mitigate for this impact and/or alter or cease diversion/withdrawal of water.
8. Continued use of water under this permit is conditioned upon compliance with monitoring, reporting, and adaptive management of water resources described in the *Aquatic Resources Mitigation Plan, Hydrologic Monitoring Plan, Adaptive Management Plan*, and requirements of the *Metals Mining, and Milling Operations Environmental Protection and Performance Security Bond* under Chapter 78.56 RCW. Monitoring and reporting schedules specified in these plans are incorporated by reference.

**Construction Schedule**

This project has already begun. Water is currently being put to beneficial use as authorized under authorized water right No. S4-34999. This is a term water right permit and will expire on December 31, 2015.

The undersigned board commissioner certifies that he/she understands the board is responsible "to ensure that all relevant issues identified during its evaluation of the application, or which are raised by any commenting party during the board's evaluation process, are thoroughly evaluated and discussed in the board's deliberations. These discussions must be fully documented in the report of examination." [WAC 173-153-130(5)] The undersigned therefore, certifies that he/she, having reviewed the report of examination, knows and understands the content of this report and concurs with the report's conclusions.

Signed at Okanogan, Washington  
This 5<sup>th</sup> day of June, 2013.



Board Representative's Name, Board Representative  
Okanogan County Water Conservancy Board

---

If you have special accommodation needs or require this form in alternate format, please contact 360-407-6607 (Voice) or 711 (TTY) or 1-800-833-6388 (TTY).

Ecology is an equal opportunity employer